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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,119	02/04/2004	Joon-Kui Ahn	K-0607	8826

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EXAMINER	
SHARMA, SUJATHA R	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,119	AHN ET AL.	
	Examiner	Art Unit	
	Sujatha Sharma	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) 11,12 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Claims 8,9 is objected to because of the following informalities:

In line 1, "0,5" should read as –0.5--

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11,12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "the corresponding base station" in 3. Claim 11 is dependent on claim1 and claim 1 recites plurality of base stations. There is insufficient antecedent basis for this limitation in the claim. The claims will be treated on merits as best understood.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashem [US 6,269,239].

Regarding claim 1, Hashem discloses a system and method to combine power control commands during soft handoff in DS/CDMA cellular systems. Hashem further discloses a method comprising the steps of:

- computing command values for a plurality of base stations in a terminal in soft handover with a plurality of the base stations transmitting power control commands to the terminal; see col. 3, lines 5-48
- lowering uplink transmission power if the command values computed for a plurality of the base stations includes at least one power-down command. See col. 4, lines 1-7

Regarding claim 2, Hashem further discloses a method wherein if there isn't the power-down command in the command values, further comprising the step of raising the uplink transmission power if power-up commands outnumber power-maintain commands in the power control commands. See col. 4, lines 1-11, where the mobile station receives power control commands from various base stations in soft handoff and wherein the power control bits all have a zero indicating an increase in power. The fact that all the bits are zero also indicates that there is no power down commands from any of the base stations.

Regarding claim 3, Hashem further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of maintaining the uplink transmission power if power-up commands are smaller than or equal to power-maintain

commands in the power control commands. See col. 4, lines 40-53. Here the weighted power control commands C_n are given values of -1, +1 and zero. If all the C_n bits are zero which indicates that power-up commands are smaller thank power maintain commands, then the power remains unchanged.

Regarding claim 4, Hashem further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of raising the uplink transmission power if the entire power control commands indicate transmission power increase. See col. 4, lines 1-11, where the mobile station receives power control commands from various base stations in soft handoff and wherein the power control bits all have a zero indicating an increase in power. The fact that all the bits are zero also indicates that there is no power down commands from any of the base stations.

Regarding claim 5, Hashem discloses a method comprising the steps of:

- receiving a power control command transmitted from at least one base station; see col. 4, lines 1-2
- computing at least one command value according to the received power control command; see col. 4, lines 40-65
- lowering uplink transmission power if the command value includes a transmission power-down command value. See col. 4, lines 40-53

6. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Padovani [US 6,411,799].

Regarding claim 1, Padovani discloses a system and method to provide power control mechanism that supports soft handoff. Padovani further discloses a method comprising the steps of:

- computing command values for a plurality of base stations in a terminal in soft handover with a plurality of the base stations transmitting power control commands to the terminal; See col. 7, lines 34-49 and col. 10, line 39 – col. 11, line 31
- lowering uplink transmission power if the command values computed for a plurality of the base stations includes at least one power-down command. See col. 7, lines 46-62 and col. 11, lines 42-44

Regarding claim 2, Padovani further discloses a method wherein if there isn't the power-down command in the command values, further comprising the step of raising the uplink transmission power if power-up commands outnumber power-maintain commands in the power control commands. See col. 7, lines 60-62 where power maintain command is zero, and all the power commands are power up commands, thus indicating power-up commands outnumber power-maintain commands in the power control commands

Regarding claim 3, Padovani further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of maintaining the uplink transmission power if power-up commands are smaller than or equal to power-maintain commands in the power control commands. See col. 7, lines 46-62

Regarding claim 4, Padovani further discloses a method wherein if there isn't the power-down command in the power control commands, further comprising the step of raising the uplink transmission power if the entire power control commands indicate transmission power increase. See col. 7, lines 60-62

Regarding claim 5, Padovani discloses a method comprising the steps of:

- receiving a power control command transmitted from at least one base station; see col. 7, lines 4-45
- computing at least one command value according to the received power control command; see col. 7, lines 34-62
- lowering uplink transmission power if the command value includes a transmission power-down command value. See col. 7, lnes 54-62

Regarding claim 6, Padovani discloses all the limitations as claimed. However he fails to disclose a method wherein if there isn't the transmission power-down value in the command value, further comprising the steps of:

- comparing an average of the command value to a reference value; see col. 7, lines 46-62, col. 11, line 42 – col. 12, line 11 where the average power control command is computed from the received power control commands and col. 12, lines 12-48 where the average value is compared to a threshold

- raising or maintaining the uplink transmission power according to a result of the comparing step. See col 5, lines 13-20 and 47-65, and col. 12, lines 12-32

Regarding claim 7, Padovani further discloses a method wherein the command value is 1 for transmission power-up, 0 for transmission power-maintain, or -1 for transmission power-down. See col. 5, lines 13-20, col. 6, lines 34-48.

Regarding claim 8, Padovani further discloses a method wherein the reference value is 0.5. See col. 12, lines 23-48

Regarding claim 9, Padovani further discloses a method wherein, in the step of raising or maintaining the uplink transmission power according to the result of the comparing step, the uplink transmission power is raised if the average of the command value exceeds 0.5 or is maintained if the average of the command value is equal to or smaller than 0.5. See col. 5, lines 13-20 and col. 12, lines 12-66

Regarding claim 10, Padovani further discloses a method wherein, in the step of raising or maintaining the uplink transmission power according to the result of the comparing step, the uplink transmission power is raised if the average of the command is equal to or greater than 0.5 or is maintained if the average of the command value is smaller 0.5. See col. 5, lines 13-20 and col. 12, lines 12-66

Allowable Subject Matter

7. Claims 11,12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In addition, claims 11,12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 11 particularly discloses a method of providing hysteresis during power control in order to avoid unnecessary power increase that will cause interference or power decrease that will result in poor performance. The claims further discloses a method wherein

- the command value computing step computes the command value corresponding to transmission power-up for any one of the corresponding base station if transmission power-up commands keep being transmitted from the said corresponding base station for five time slots,
- the command value corresponding to transmission power-down for any one of the corresponding base station if transmission power-down commands keep being transmitted from the said corresponding base station for the five time slots, or
- the command value corresponding to transmission power-maintain, otherwise.

Claim 12 is dependent on claim and discloses a method wherein a reference slot of the five time slots is a first time slot of a radio frame.

The closest prior art Hashem discloses a method of spreading the power control command over a plurality of time slots. See col. 2, lines 57-63. However Padovani (the primary reference) in combination with Hashem fails to disclose the above underlined unique feature of the invention.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kaneda [US 6,343,218] Transmission power control method, mobile phone, base station, and recording medium

Furukawa Base station transmission power control system mobile station and base station

Chen [6,512,925] Method and apparatus for controlling transmission power while in soft handoff

Holtzman [US 6,788,685] Method and apparatus for controlling transmission power in a CDMA communication system

Tsunehara [US 6,307,844] CDMA communication system and its transmission power control method

Jarvisalo [US 2003/0157955] Method and system for power control of a wireless communication device, and a wireless communication device

Subramanya [US 6,807,429] Method and apparatus for combining power control commands received in a wireless communication system

Bhagalia [US 5,815,798] Apparatus and method of controlling transmission power in a subscriber terminal of a wireless communication system

Chambers [GB 2 341 294] Enhanced power control signaling un CDMA cellular radio system

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sujatha Sharma whose telephone number is 571-272-7886. The examiner can normally be reached on Mon-Fri 7.30am - 4.00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sujatha Sharma
October 13, 2006